इंटरनेट मानक

Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

“जानने का अधिकार, जीने का अधिकार”
Mazdoor Kisan Shakti Sangathan
“The Right to Information, The Right to Live”

“पुराने को छोड नये के तरफ”
Jawaharlal Nehru
“Step Out From the Old to the New”

IS 13246 (1992): Guide for choosing modular dimensions for waveguide components [LITD 6: Wires, Cables, Waveguides and Accessories]

“ज्ञान से एक नये भारत का निर्माण”
Satyanarayan Gangaram Pitroda
“Invent a New India Using Knowledge”

Act Number 22 of 2005
The Indian Parliament
RIGHT TO INFORMATION

Made Available By
Public.Resource.Org

“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”
Bhartṛhari—Nītiśatakam
“Knowledge is such a treasure which cannot be stolen”

BLANK PAGE

BRUTUM FULMEN

IGNORANTIA JURIS NON EXCUSAT

PROTECTED BY COPYRIGHT

IS 13246 : 1992
IEC Pub 374 (1971)
(Reaffirmed 2003)

भारतीय मानक

तरंग पथक घटकों के माड्यूली आयाम चुनने के लिए मार्गदर्शिका

Indian Standard

GUIDE FOR CHOOSING MODULAR DIMENSIONS FOR WAVEGUIDE COMPONENTS

UDC 621·372 : 006·78

© BIS 1992

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

April 1992 Price Group 3

IS 13246 : 1992
IEC Pub 374 (1971)

Indian Standard

GUIDE FOR CHOOSING MODULAR DIMENSIONS FOR WAVEGUIDE COMPONENTS

NATIONAL FOREWORD

This Indian Standard which is identical with IEC Pub 374 (1971) 'Guide for choosing modular dimensions for waveguide components', issued by the International Electrotechnical Commission (IEC), was adopted by the Bureau of Indian Standards on the recommendation of the Microwave Components and Accessories Sectional Committee (LTD 19) and approval of the Electronics and Telecommunication Division Council.

Certain terminology and conventions are not identical with those used in Indian Standard; attention is especially drawn to the following:

a) Comma (,) has been used as decimal marker while in Indian Standards the current practice is to use a point (.) as decimal marker.

b) Wherever the words 'International Standard' appear, referring to this standard, they should be read as 'Indian Standard'.

c) For the purpose of Indian Standard, only the metric dimensions are applicable.

This Indian Standard is to be used in conjunction with IS 4493 (Part 1) : 1979 'Hollow metallic waveguide: Part 1 General requirements and tests (*first revision*)' and IS 4493 (Part 2) : 1981 'Hollow metallic waveguides: Part 2 Ordinary rigid rectangular waveguides'. It is intended to give guidance when choosing basic dimension of new waveguide components at the design stage. It is recognized that it will not always be possible or convenient to adhere to the rules, but an attempt should be made whenever possible to choose dimensions in accordance with the principles given herein.

Only the English language text in the International Standard has been retained while adopting it in this Indian Standard.

As in the Original Standard, this Page is Intentionally Left Blank

1. Standard dimensions

The standard dimensions, based on a modular concept, are listed in Table I for each waveguide size.

Note. — Certain integral multiples of the module values for each waveguide size given in Table II have been used to construct Table I.

2. Rules for the application of standard dimensions

The following rules govern the relative positions of the flanges in a multi-port component.

a) If flange planes are either parallel or orthogonal, the rectangular coordinate distances between the centre point of each flange opening and the centre point of every other flange opening should be standard dimensions. (Dimensions *A* to *I* in Figures 1a, 1b and 1c, pages 7 and 8.)

b) If it is impossible to fulfil the conditions of paragraph *a)*, then the standard dimensions shall be assigned in accordance with the following order:

1. the longest rectangular coordinate distance;
2. the shortest rectangular coordinate distance;
3. the rectangular coordinate distances in the order of their *increasing* size.

c) If flange planes are neither parallel nor orthogonal (Figure 1d, page 8) the intersection angle θ of these planes should be 30°, 45° or 60°. Standard dimensions should be used for:

1. the apparent radius *R* which is the shortest distance between the centre point of the flange opening and the intersection line of the flange planes; and
2. the distance *J* (Figure 1d) which is equal to the shortest distance between the port axes *. It should be noted that θ, *R* and *J* jointly describe in cylindrical coordinates the position of a flange relative to another flange.

3. Remarks

If dimensions of waveguide components are chosen according to these principles, port axes * will coincide with the equidistant lines of a cubic grid (this equidistance corresponds to one of the module dimensions given in Table II) and the centre points of the flange openings will coincide with grid intersection points. Exceptions are the cases of Clause 2 *c)*; however certain assemblies of such bends and corners, the flange planes of which intersect at angles of 0° or 90° are again consistent with these principles.

---

* The port axis is a line that is normal to the plane of the flange and also passes through the centre point of the flange opening.

TABLE I

Standard dimensions	Type designation 153 IEC—				
mm	R3-R14	R18-R32	R40-R70	R84-R140	R180-R2 600
0	×	×	×	×	×
6.25					×
12.5				×	×
18.75					×
25.0			×	×	×
37.5				×	×
50.0		×	×	×	×
62.5				×	×
75.0			×	×	×
100	×	×	×	×	×
125			×	×	×
150		×	×	×	×
200	×	×	×	×	×
250		×	×	×	×
300	×	×	×	×	×
400	×	×	×	×	×
500	×	×	×	×	×
600	×	×	×	×	×
800	×	×	×	×	×
1 000	×	×	×	×	×
1 200	×	×	×	×	×
1 500	×	×	×	×	×
2 000	×	×	×	×	×
2 500	×	×	×	×	×
3 000	×	×	×	×	×
3 500	×	×	×	×	×
5 000	×	×	×	×	×

TABLE II

Type designation 153 IEC—	Module values mm
R3-R14	100
R18-R32	50
R40-R70	25
R84-R140	12.5
R180-R2 600	6.25

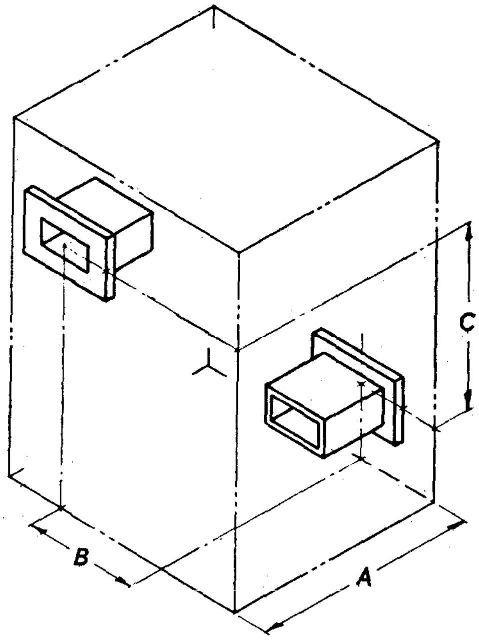

FIGURE 1a

First angle projection

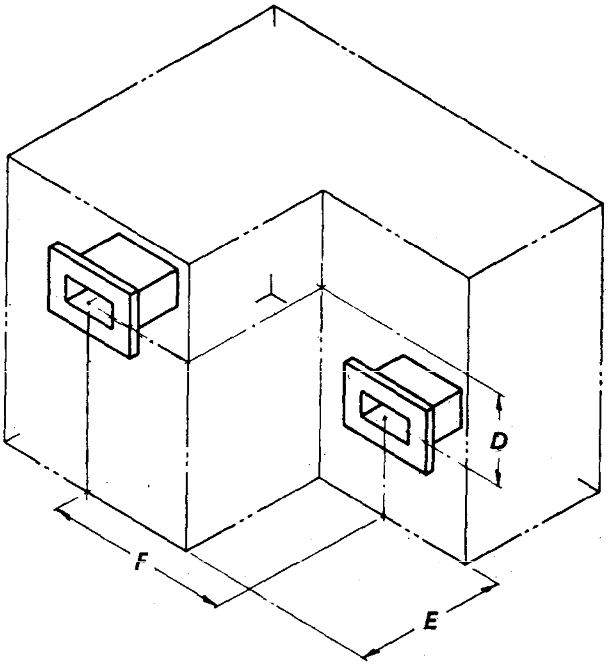

FIGURE 1b

First angle projection

Date: 1971

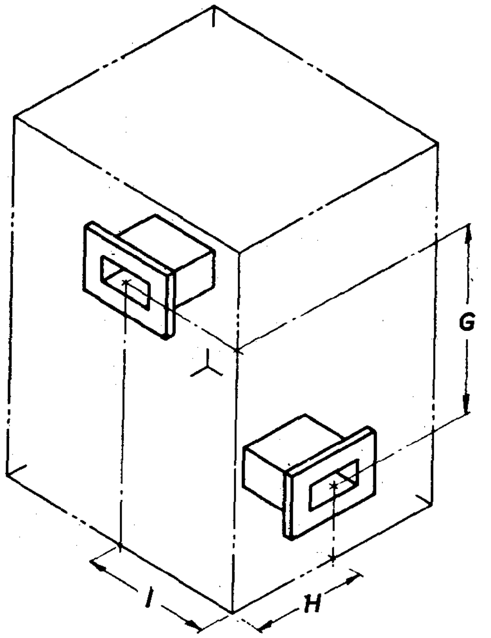

FIGURE 1c

First angle projection

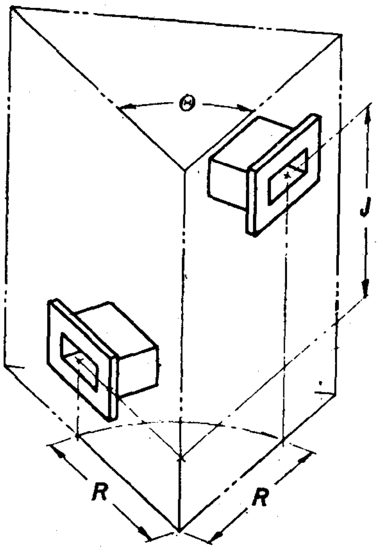

FIGURE 1d

First angle projection

Date: 1971

Bureau of Indian Standard

BIS is a statutory institution established under the *Bureau of Indian Standards Act, 1986* to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Copyright

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Director (Publications), BIS.

Revision of Indian Standards

Indian Standards are reviewed periodically and revised, when necessary and amendments, if any, are issued from time to time. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition. Comments on this Indian Standard may be sent to BIS giving the following reference:

Doc : No. LTD 19 (1530)

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

BUREAU OF INDIAN STANDARDS

Headquarters :

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
Telephones : 331 01 31, 331 13 75

Telegrams : Manaksanstha
(Common to all Offices)

Regional Offices :	Telephone
Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg NEW DELHI 110002	331 01 31 331 13 75
Eastern : 1/14 C. I. T. Scheme VII M, V. I. P. Road, Maniktola CALCUTTA 700054	37 86 62
Northern : SCO 445-446, Sector 35-C, CHANDIGARH 160036	53 38 43
Southern : C. I. T. Campus, IV Cross Road, MADRAS 600113	235 02 16
Western : Manakalaya, E9 MIDC, Marol, Andheri (East) BOMBAY 400093	6 32 92 95

Branches : AHMADABAD, BANGALORE, BHOPAL, BHUBANESHWAR, COIMBATORE, FARIDABAD, GHAZIABAD, GUWAHATI, HYDERABAD, JAIPUR, KANPUR, LUCKNOW, PATNA, THIRUVANANTHAPURAM.

Printed at Printwell Printers, Aligarh, India